

Volume 221, 1996

# BIOCHEMICAL AND BIOPHYSICAL

---

## *Research Communications*

---

*Editors*

JOHN N. ABELSON  
ERNESTO CARAFOLI  
I. C. GUNSALUS  
AKIRA ICHIHARA  
JAMES D. JAMIESON  
YASUO KAGAWA  
M. DANIEL LANE  
WILLIAM J. LENNARZ  
MASAMI MURAMATSU  
STEN ORRENIUS  
BENNETT M. SHAPIRO



ACADEMIC PRESS

San Diego New York Boston London Sydney Tokyo Toronto

<http://www.apnet.com>

*Copyright © 1996 by Academic Press, Inc.*

ALL RIGHTS RESERVED

No part of this publication may be reproduced or transmitted in any form, or by any means, electronic or mechanical, including photocopy, recording, or any information storage and retrieval system, without permission in writing from the copyright owner.

The appearance of the code at the bottom of the first page of an article in this journal indicates the copyright owner's consent that copies of the article may be made for personal or internal use, or for the personal or internal use of specific clients. This consent is given on the condition, however, that the copier pay the stated per copy fee through the Copyright Clearance Center, Inc. (222 Rosewood Drive, Danvers, Massachusetts 01923), for copying beyond that permitted by Sections 107 or 108 of the U.S. Copyright Law. This consent does not extend to other kinds of copying, such as copying for general distribution, for advertising or promotional purposes, for creating new collective works, or for resale. Copy fees for pre-1996 articles are as shown on the article title pages; if no fee code appears on the title page, the copy fee is the same as for current articles.

0006-291X/96 \$18.00

MADE IN THE UNITED STATES OF AMERICA

This journal is printed on acid-free paper.



## CONTENTS

## Volume 221, Number 1, April 5, 1996

|                                                                                                                                                                                                                          |                                                                                                                      |    |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------|----|
| Bradykinin Increases Ceramide and Sphingosine Content in Human Fibroblasts:<br>Possible Involvement of Glycosphingolipids                                                                                                | <i>Elisabetta Meacci, Valeria Vasta,<br/>Marta Farnararo, and Paola Bruni</i>                                        | 1  |
| 17 $\beta$ -Estradiol and Smooth Muscle Cell Proliferation in Aortic Cells of Male and<br>Female Rats                                                                                                                    | <i>Emma Espinosa, Barry S. Oemar, and Thomas F. Lüscher</i>                                                          | 8  |
| The Ca <sup>++</sup> /Calmodulin-Dependent Protein Kinase II Inhibitors KN62 and KN93,<br>and Their Inactive Analogues KN04 and KN92, Inhibit Nicotinic Activation of<br>Tyrosine Hydroxylase in Bovine Chromaffin Cells | <i>Philip D. Marley and<br/>Kerrie A. Thomson</i>                                                                    | 15 |
| Modulation of Adhesion-Dependent cAMP Signaling by Echistatin and Alendro-<br>nate                                                                                                                                       | <i>Jenny Hwai-Jen Fong and Donald E. Ingber</i>                                                                      | 19 |
| Adrenocorticotropin Induces Calcium Oscillations in Adrenal Fasciculata Cells:<br>Single Cell Imaging                                                                                                                    | <i>Tetsuya Kimoto, Yoshihiro Ohta, and Suguru Kawato</i>                                                             | 25 |
| Structural Heterogeneity of Phospholipase D in 10 Dicots                                                                                                                                                                 | <i>James H. Dyer,<br/>Sugin Zheng, and Xuemin Wang</i>                                                               | 31 |
| Visualisation of Nitric Oxide Generated by Activated Murine Macrophages                                                                                                                                                  | <i>A. M. Leone, V. W. Furst, N. A. Foxwell, S. Celtek, and S. Moncada</i>                                            | 37 |
| Dehydrogenase Binding to the 3'-Untranslated Region of GLUT1 mRNA                                                                                                                                                        | <i>Kevin McGowan and Phillip H. Pekala</i>                                                                           | 42 |
| Interaction of S100a <sub>0</sub> Protein with the Actin Capping Protein, CapZ: Character-<br>ization of a Putative S100a <sub>0</sub> Binding Site in CapZ $\alpha$ -Subunit                                            | <i>Vasily V. Ivanenkov, Ruth V. W. Dimlich, and Gordon A. Jamieson, Jr.</i>                                          | 46 |
| Evidence for a K <sup>+</sup> Channel Requirement in Spreading of Rat Basophilic Leukemia<br>Cells on Fibronectin-Coated Surfaces                                                                                        | <i>Paola Zigrino, Guido Gaietta,<br/>Alberta Zambonin-Zallone, Anthony J. Pelletier, and Vito Quaranta</i>           | 51 |
| The House Dust Mite Allergen Der p1 Catalytically Inactivates $\alpha_1$ -Antitrypsin by<br>Specific Reactive Centre Loop Cleavage: A Mechanism That Promotes Airway<br>Inflammation and Asthma                          | <i>Noor A. Kalsbeker, Susan Deam, Louise Chambers,<br/>Suneal Sreedharan, Keith Brocklehurst, and David A. Lomas</i> | 59 |
| Endothelin Stimulates <i>sis</i> -Inducing Factor-like DNA Binding Activity in CHO-K1<br>Cells Expressing ET <sub>A</sub> Receptors                                                                                      | <i>Thomas C. Peeler, Kathleen M. Conrad,<br/>and Kenneth M. Baker</i>                                                | 62 |
| Keratin 8 Phosphorylation <i>in Vitro</i> by cAMP-Dependent Protein Kinase Occurs<br>within the Amino- and Carboxyl-Terminal End Domains                                                                                 | <i>Shoji Ando,<br/>Toshiya Tokui, Takeo Yano, and Masaki Inagaki</i>                                                 | 67 |
| The Phosphatase Inhibitor Calyculin Antagonizes the Rapid Initiation of Apoptosis<br>by Photodynamic Therapy                                                                                                             | <i>Yu Luo and David Kessel</i>                                                                                       | 72 |
| Titration of Recombinant Aequorin with Calcium Chloride                                                                                                                                                                  | <i>Osamu Shimomura<br/>and Satoshi Inouye</i>                                                                        | 77 |
| Efficient Gene Transfer into Mammalian Cells with Cholesteryl-Spermidine                                                                                                                                                 | <i>Darius Moradpour, Julia I. Schauer, Vincent R. Zurawski, Jr., Jack R. Wands,<br/>and Raymond H. Boutin</i>        | 82 |
| Galanin Increases Cytoplasmic Calcium in Insulin-Producing RINm5F Cells by<br>Activating Phospholipase C                                                                                                                 | <i>Bo Abbrén</i>                                                                                                     | 89 |



|                                                                                                                                                                                                                                                                                        |     |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|
| Signaling Mechanism of PMA-Induced Differentiation of K562 Cells<br><i>Chi Dug Kang, Bok Kun Lee, Kwang Woon Kim, Cheol Min Kim,<br/>Sun Hee Kim, and Byung Seon Chung</i>                                                                                                             | 95  |
| Inactive Zymogen and Highly Active Proteolytically Processed Membrane-Bound<br>Forms of the Transglutaminase 1 Enzyme in Human Epidermal Keratinocytes<br><i>Peter M. Steinert, Soo-Il Chung, and Soo-Youl Kim</i>                                                                     | 101 |
| Dietary Cholesterol Induces Transient Changes in Plasma Nitrate Levels in Rabbits<br>That Are Correlated to Microcirculatory Changes<br><i>Anna Freyschuss,<br/>Rui-Juan Xiu, Günther Bentbin, Peter Henriksson, Ingemar Björkhem,<br/>and Ake Wennmalm</i>                            | 107 |
| PACAP Stimulates Transcription of c-Fos and c-Jun and Activates the AP-1<br>Transcription Factor in Rat Pancreatic Carcinoma Cells<br><i>Heiner Schäfer,<br/>Jie Zheng, Friederike Gundlach, Rainer Günther, and Wolfgang E. Schmidt</i>                                               | 111 |
| Purification and Characterization of a Glutathione Dependent Dehydroascorbate<br>Reductase from Human Erythrocytes<br><i>Dian Peng Xu, Michael P. Washburn,<br/>Guo Ping Sun, and William W. Wells</i>                                                                                 | 117 |
| The Clonal Progression in the Neoplastic Process of Nasopharyngeal Carcinoma<br><i>Xin Jiang and Kai-Tai Yao</i>                                                                                                                                                                       | 122 |
| Transgenic Yeast Expressing Human Cytochrome P450s Can Serve as a Tool in<br>Studies of the Mechanisms of Their Induction by Various Effectors<br><i>Irina E. Kovaleva, Eugene Yu. Krynetskii, and Valentin N. Luzikov</i>                                                             | 129 |
| Purification of the Growth Hormone Releasing Hormone Receptor with a<br>C-Terminal, Biotinylated Affinity Ligand<br><i>John R. Zysk, Bruce D. Gaylinn,<br/>Charles E. Lyons, Bonita Johnson, C. Mark Eppler, William R. Baumbach,<br/>and Michael O. Thorner</i>                       | 133 |
| p66 <sup>Shc</sup> Isoform Down-Regulated and Not Required for HER-2/neu Signaling<br>Pathway in Human Breast Cancer Cell Lines with HER-2/neu Overexpression<br><i>Youming Xie and Mien-Chie Hung</i>                                                                                 | 140 |
| Location of the Non-Heme Iron Center on the $\alpha$ Subunit of Photoreactive Nitrile<br>Hydratase from <i>Rhodococcus</i> sp. N-771<br><i>Masafumi Odaka, Takumi Noguchi,<br/>Shigehiro Nagashima, Masafumi Yohda, Sadayo Yabuki, Mikio Hoshino,<br/>Torinao Inoue, and Isao Endo</i> | 146 |
| Abnormal Behavior and Neurotransmissions of Tenascin Gene Knockout Mouse<br><i>Fumihiko Fukamauchi, Nobuko Mataga, Yi-Jun Wang, Shigeo Sato,<br/>Atsushi Yoshiki, and Moriaki Kusakabe</i>                                                                                             | 151 |
| cDNA Cloning of a Novel CYP3A from Rat Brain<br><i>Huamin Wang,<br/>Hidenori Kawashima, and Henry W. Strobel</i>                                                                                                                                                                       | 157 |
| Nitric Oxide Donor SNAP Induces Apoptosis in Smooth Muscle Cells through<br>cGMP-Independent Mechanism<br><i>E. Nishio, K. Fukushima, M. Shiozaki,<br/>and Y. Watanabe</i>                                                                                                             | 163 |
| Evaluation and Optimization of Different Cationic Liposome Formulations for <i>in</i><br><i>Vivo</i> Gene Transfer<br><i>Nejat K. Egilmez, Yoshimi Iwanuma, and<br/>Richard B. Bankert</i>                                                                                             | 169 |
| Ascertaining the Number of Essential Thiol Groups for the Folding of Creatine<br>Kinase<br><i>Hong-Rui Wang, Ji-Hong Bai, Si-Yang Zheng, Zhi-Xin Wang, and<br/>Hai-Meng Zhou</i>                                                                                                       | 174 |
| Stimulating Effect of 6R-Tetrahydrobiopterin on $CA^{2+}$ Channels in Neurons of<br>Rat Dorsal Motor Nucleus of the Vagus<br><i>Takuma Shiraki, Kunio Koshimura,<br/>Shigeo Kobayashi, Soichi Miwa, Tomoh Masaki, Yasuyoshi Watanabe,<br/>Yoshio Murakami, and Yuzuru Kato</i>         | 181 |

|                                                                                                                                                                                                                                                                                                                            |     |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|
| Characterization of Bacterial Cell Membrane Attachment Sites of Plasmid R6K<br><i>Philip F. Jemilohun, C. W. Clark, and Errol R. Archibold</i>                                                                                                                                                                             | 186 |
| Vascular Endothelial Growth Factor Is Induced by Long-Term High Glucose Concentration and Up-Regulated by Acute Glucose Deprivation in Cultured Bovine Retinal Pigmented Epithelial Cells<br><i>Hirobito Sone, Yasushi Kawakami, Yukichi Okuda, Shinichi Kondo, Mitsuya Hanatani, Hideo Suzuki, and Kamejiro Yamashita</i> | 193 |
| Cloning and Expression of a Rat Brain Basic Helix-Loop-Helix Factor<br><i>Hideshi Kawakami, Hirofumi Maruyama, Michio Yasunami, Hiroaki Ohkubo, Hirokazu Hara, Takahiko Saida, Shigetada Nakanishi, and Shigenobu Nakamura</i>                                                                                             | 199 |

## ERRATA

|                                                                                                                                                                                                                                                                                                                                                                                                     |     |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|
| Volume 207, Number 2 (1995): Tetsuji Taya, Noriyuki Yamasaki, Hiroshi Tsubamoto, Akiko Hasegawa, and Koji Koyama, "Cloning of a cDNA Coding for Porcine Zona Pellucida Glycoprotein ZP1 and Its Genomic Organization," pp. 790-799                                                                                                                                                                  | 205 |
| Volume 217, Number 3 (1995): E. Gulbins, K. Schlottmann, B. Brenner, F. Lang, and K. M. Coggeshall, "Molecular Analysis of Ras Activation by Tyrosine Phosphorylated Vav," pp. 876-885                                                                                                                                                                                                              | 205 |
| Volume 218, Number 1 (1996): Takayuki Sugiura, Sachiko Kondo, Akihiro Sukagawa, Takashi Tonegawa, Shinji Nakane, Atsushi Yamashita, and Keizo Waku, "Enzymatic Synthesis of Anandamide, an Endogenous Cannabinoid Receptor Ligand, through N-Acylphosphatidylethanolamine Pathway in Testis: Involvement of $\text{Ca}^{2+}$ -Dependent Transacylase and Phosphodiesterase Activities," pp. 113-117 | 206 |
| Volume 218, Number 3 (1996): Samer Kaddoura, Nicholas P. Curzen, Timothy W. Evans, John D. Firth, and Philip A. Poole-Wilson, "Tissue Expression of Endothelin-1 mRNA in Endotoxaemia," pp. 641-647                                                                                                                                                                                                 | 206 |

## Volume 221, Number 2, April 16, 1996

|                                                                                                                                                                                                                                                                                |     |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|
| DNA-Dependent Protein Kinase Inhibitor (OK-1035) Suppresses p21 Expression in HCT116 Cells Containing Wild-Type p53 Induced by Adriamycin<br><i>Yukinori Take, Mariko Kumano, Hirobumi Teraoka, Susumu Nishimura, and Akira Okuyama</i>                                        | 207 |
| Regulation of jun Expression and Activation of AP-1 Activity by Erythropoietin<br><i>Samuel Evans Adunyah, Karamba J. Ceesay, and Juan A. Rivero</i>                                                                                                                           | 213 |
| Sequence Analysis of Four Acidic $\beta$ -Crystallin Subunits of Amphibian Lenses: Phylogenetic Comparison between $\beta$ - and $\gamma$ -Crystallins<br><i>Shao-Fan Lu, Fu-Ming Pan, and Shyh-Horng Chiou</i>                                                                | 219 |
| Involvement of a Disulfide Bridge in Catalytic Activity of Camel Lens $\zeta$ -Crystallin<br><i>Ali S. Duhaime and Nayyar Rabbani</i>                                                                                                                                          | 229 |
| Development of Radioimmunoassay for Human Leptin<br><i>Kiminori Hosoda, Hiroaki Masuzaki, Yoshihiro Ogawa, Takashi Miyawaki, Junko Hiraoka, Ikuko Hanaoka, Akiko Yasuno, Toshiyuki Nomura, Yukio Fujisawa, Yasunao Yoshimasa, Shigeo Nishi, Yukio Yamori, and Kazuwa Nakao</i> | 234 |
| Genomic Structure and Transcription of a Murine Odorant Receptor Gene: Differential Initiation of Transcription in the Olfactory and Testicular Cells<br><i>Hisae Asai, Hiroaki Kasai, Yoichi Matsuda, Nika Yamazaki, Fumikiyo Nagawa, Hitoshi Sakano, and Akio Tsuboi</i>     | 240 |



|                                                                                                                                                                                   |                                                                                                                                            |     |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|-----|
| Specific Cleavage of Recombinant Protein $\tau 3$ between Valine-220 and Tyrosine-221 (val-309 and tyr-310 of $\tau 4$ ) by a Double-Stranded DNA-Stimulated Protease             | <i>Joseph M. Wu, Shaojian An, Chunyung Ng, Clay W. Scott, and Claudia B. Caputo</i>                                                        | 248 |
| Immunosuppressors Inhibit Voltage-Gated Potassium Channels in Human Peripheral Blood Lymphocytes                                                                                  | <i>György Panyi, Rezső Gáspár, Zoltán Krasznai, Jan J. ter Horst, Marcel Ameloot, Adorján Aszalós, Paul Steels, and Sándor Damjanovich</i> | 254 |
| Heme Oxygenase-1 Gene Expression by a Glutathione Depletor, Phorone, Mediated through AP-1 Activation in Rats                                                                     | <i>Takiko Oguero, Moyuru Hayashi, Satoshi Numazawa, Kiyoshi Asakawa, and Takemi Yoshida</i>                                                | 259 |
| Spectroscopic Characterization of Bendazac and Benzylamine: Possible Photochemical Modes of Action                                                                                | <i>Joseph M. Jez, Jane M. Vanderkooi, and Alan M. Laties</i>                                                                               | 266 |
| The Reactions Catalyzed by the Inducible Bifunctional Enzyme of Rat Liver Peroxisomes Cannot Lead to the Formation of Bile Acids                                                  | <i>Rongfang Xu and Dean A. Cuebas</i>                                                                                                      | 271 |
| Purification and Chemical Characterization of a Potent Inhibitor of the Na-K-Cl Cotransport System in Rat Urine                                                                   | <i>José O. Alda, José A. Mayoral, Manuel Lou, Ignacio Gimenez, Rosa M. Martinez, and Ricardo P. Garay</i>                                  | 279 |
| cDNA Cloning and Expression of a Novel Adipose Specific Collagen-like Factor, apM1 (Adipose Most Abundant Gene Transcript 1)                                                      | <i>Kazuhisa Maeda, Kousaku Okubo, Ichiro Shimomura, Tohru Funahashi, Yuji Matsuzawa, and Kenichi Matsubara</i>                             | 286 |
| Effects of Unilateral Cryptorchidism on the Expression of Gonadotropin Receptor mRNA                                                                                              | <i>Akiko Iizuka, Min Kyun Park, and Takao Mori</i>                                                                                         | 290 |
| Effect of Nonenzymatic Histone Acetylation on Chromatin High-Order Folding                                                                                                        | <i>Wladyslaw A. Krajewski</i>                                                                                                              | 295 |
| Studies of Human and Rat Blood under Oxidative Stress: Changes in Plasma Thiol Level, Antioxidant Enzyme Activity, Protein Carbonyl Content, and Fluidity of Erythrocyte Membrane | <i>Valentina Yelinova, Yury Glazachev, Valery Khramtsov, Larissa Kudryashova, Valentina Rykova, and Rudolf Salganik</i>                    | 300 |
| Molecular Cloning and Functional Expression of the Cytochrome P450 11B-Hydroxylase of the Guinea Pig                                                                              | <i>Hannes E. Bülow, Katharina Möbius, Volker Bähr, and Rita Bernhardt</i>                                                                  | 304 |
| Mechanical Effects on the Kinetics of the HIV Proteinase Deactivation                                                                                                             | <i>Petr Kuzmič, Anne G. Peranteau, Carlos García-Echeverría, and Daniel H. Rich</i>                                                        | 313 |
| High Rates of Substrate Hydroxylation by Human Cytochrome P450 3A4 in Reconstituted Membranous Vesicles: Influence of Membrane Charge                                             | <i>Magnus Ingelman-Sundberg, Ann-Louise Hagbjörk, Yune-Fang Ueng, Hiroshi Yamazaki, and F. Peter Guengerich</i>                            | 318 |
| The Gene of the Protease Inhibitor SKALP/Elafin Is a Member of the Rest Gene Family                                                                                               | <i>Åke Lundwall and Magnus Ulvståck</i>                                                                                                    | 323 |
| cDNA Sequence Analysis and Expression of the A Chain of $\beta$ -Bungarotoxin from <i>Bungarus multicinctus</i> (Taiwan Banded Krait)                                             | <i>Long-sen Chang, Pei-fung Wu, and Chun-chang Chang</i>                                                                                   | 328 |
| Structural Characterization of the Human Soluble Epoxide Hydrolase Gene (EPHX2)                                                                                                   | <i>Martin Sandberg and Johan Meijer</i>                                                                                                    | 333 |

|                                                                                                                                                                                         |                                                                                                                                                           |     |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|-----|
| Bcl-2 Overexpression Blocks Activation of the Death Protease CPP32/Yama/Apopain                                                                                                         | <i>Laurent Monney, Isabelle Otter, Reynald Olivier, Ulla Ravn, Hengameh Mirzasaleh, Isabelle Fellay, Guy G. Poirier, and Christoph Borner</i>             | 340 |
| Basement Membrane Regulates Gene Expression in HEC1B(L) Endometrial Adenocarcinoma Cells                                                                                                | <i>Elisabeth Strunck, Anne-Christine Hopert, and Günter Vollmer</i>                                                                                       | 346 |
| Persistent Activation of CDK4 during Neuronal Differentiation of Rat Pheochromocytoma PC12 Cells                                                                                        | <i>Yoh Dobashi, Tetsuhiro Kudoh, Kumao Toyoshima, and Tetsu Akiyama</i>                                                                                   | 351 |
| Human CAAFI Gene—Molecular Cloning, Gene Structure, and Chromosome Mapping                                                                                                              | <i>Tokujiro Yamamura, Jiro Hitomi, Koichi Nagasaki, Mikio Suzuki, Ei-ichi Takahashi, Shiro Saito, Toshihiko Tsukada, and Ken Yamaguchi</i>                | 356 |
| cDNA Sequence Analysis and Expression of the Ribosomal Protein S24 during Oogenesis and Embryonic Development of the Sea Urchin <i>Paracentrotus lividus</i>                            | <i>Alessandra Sgroi, Paolo Colombo, Giovanni Duro, Michael Fried, Vincenzo Izzo, and Giovanni Giudice</i>                                                 | 361 |
| Tetrahydropterins Interfere with the G Protein Pathway in <i>Dictyostelium discoideum</i>                                                                                               | <i>Irmgard Ziegler and Markus Güttlich</i>                                                                                                                | 368 |
| The C-Terminal RNLL Sequence of the Plasma Retinol-Binding Protein Is Not Responsible for Its Intracellular Retention                                                                   | <i>Vasanti Natarajan, Kirsten B. Holven, Sjur Reppe, Rune Blomhoff, and Jan Øivind Moskaug</i>                                                            | 374 |
| Molecular Cloning of cDNA and Analysis of Expression of the Gene for $\alpha$ -Glucosidase from the Hypopharyngeal Gland of the Honeybee <i>Apis mellifera</i> L.                       | <i>Kazuaki Ohashi, Miyuki Sawata, Hideaki Takeuchi, Shunji Natori, and Takeo Kubo</i>                                                                     | 380 |
| <i>In Vivo</i> Trapping of Nitric Oxide in the Brain of Neonatal Rats Treated with the HIV-1 Envelope Protein gp 120: Protective Effects of $\alpha$ -Phenyl- <i>tert</i> -butyl-nitron | <i>Tabereh Tabatabaie, Charles Stewart, Quentin Pye, Yashige Kotake, and Robert A. Floyd</i>                                                              | 386 |
| Increased Circulating Hepatocyte Growth Factor in the Early Stage of Acute Myocardial Infarction                                                                                        | <i>Akira Matsumori, Yutaka Furukawa, Tetsuo Hashimoto, Koh Ono, Tetsuo Shioi, Masaharu Okada, Atsushi Iwasaki, Ryosuke Nishio, and Shigetake Sasayama</i> | 391 |
| The Interferon-Inducible Growth-Inhibitory p202 Protein: DNA Binding Properties and Identification of a DNA Binding Domain                                                              | <i>Divaker Choubey and Jordan U. Gutterman</i>                                                                                                            | 396 |
| Characterization of Differentially Expressed Genes following Brief Cardiac Ischemia                                                                                                     | <i>Ralph Knöll, René Zimmermann, Margarete Arras, and Wolfgang Schaper</i>                                                                                | 402 |
| Two Transcripts with Different Sizes Derived from a Rice Homeobox Gene, <i>OSH1</i>                                                                                                     | <i>Masanori Tamaoki, Hiroaki Ichikawa, Toshiaki Kayano, Yuriko Kano-Murakami, Naoki Yamamoto, and Makoto Matsuoka</i>                                     | 408 |
| Characterization of Representative Enzymes from a Sulfate Reducing Bacterium Implicated in the Corrosion of Steel                                                                       | <i>A. S. Pereira, R. Franco, M. J. Feio, C. Pinto, J. Lampreia, M. A. Reis, J. Calvete, I. Moura, I. Beech, A. R. Lino, and J. J. G. Moura</i>            | 414 |
| Stereospecific Effects of R-Lipoic Acid on Buthionine Sulfoximine-Induced Cataract Formation in Newborn Rats                                                                            | <i>Indrani Maitra, Elena Serbinova, Hans J. Tritschler, and Lester Packer</i>                                                                             | 422 |



|                                                                                                                                                                                                                                       |                                                                                          |     |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|-----|
| mRNA Differential Display Reveals <i>Krox-20</i> as a Neural Plasticity-Regulated Gene in the Rat Hippocampus                                                                                                                         | <i>Kaoru Inokuchi, Akiko Murayama, and Fumiko Ozawa</i>                                  | 430 |
| Translational Regulation <i>in Vivo</i> of the <i>Drosophila Melanogaster</i> mRNA Encoding Succinate Dehydrogenase Iron Protein via Iron Responsive Elements                                                                         | <i>Öjar Melefors</i>                                                                     | 437 |
| $\beta$ -Estradiol Inhibits $\text{Na}^+$ - $\text{P}_i$ Cotransport across Renal Brush Border Membranes from Ovariectomized Rats                                                                                                     | <i>Kelly W. Beers, Michael A. Thompson, Eduardo N. Chini, and Thomas P. Dousa</i>        | 442 |
| Lack of Involvement of Protein Kinase A Phosphorylation in Voltage-Dependent Facilitation of the Activity of Human Cardiac L-Type Calcium Channels                                                                                    | <i>Jörg Eisfeld, Gabor Mikala, Arnold Schwartz, Gyula Varadi, and Udo Klöckner</i>       | 446 |
| Host-Parasite Interaction in Human Onchocerciasis: Identification and Sequence Analysis of a Novel Human Calgranulin                                                                                                                  | <i>Thomas Marti, Klaus D. Erttmann, and Michaela T. Gallin</i>                           | 454 |
| Isolation and Characterization of the <i>recA</i> Gene of <i>Xanthomonas campestris</i> pv. <i>campestris</i>                                                                                                                         | <i>Tze-Ching Lee, Nien-Tsung Lin, and Yi-Hsiung Tseng</i>                                | 459 |
| Detection of a CYP3A5 Allelic Variant: A Candidate for the Polymorphic Expression of the Protein?                                                                                                                                     | <i>Y. Jounaïdi, Valérie Hyraille, Laurence Gervot, and Patrick Maurel</i>                | 466 |
| Soluble 5'-Nucleotidase from Thyroid Gland Partial Purification and Properties                                                                                                                                                        | <i>Janina Niedźwiecka and Leokadia Jaroszewicz</i>                                       | 471 |
| Site-Directed Mutagenesis of a Novel Serine Arylesterase from <i>Vibrio mimicus</i> Identifies Residues Essential for Catalysis                                                                                                       | <i>Rey-Chang Chang, Jack Chien Chen, and Jei-Fu Shaw</i>                                 | 477 |
| Bioassay of Endothelium-Derived Hyperpolarizing Factor                                                                                                                                                                                | <i>Jean-Vivien Mombouli, Ibrahim Bissirion, Valère D. Agboton, and Paul M. Vanhoutte</i> | 484 |
| ERRATUM                                                                                                                                                                                                                               |                                                                                          |     |
| Volume 218, Number 3 (1996): Kasirajan Ayyanathan, Tania E. Webbs, Arbansjit K. Sandhu, Raghbir S. Athwal, Eric A. Barnard, and Satya P. Kunapuli, "Cloning and Chromosomal Localization of the Human P2Y1 Purinoceptor," pp. 783-788 |                                                                                          | 489 |

### Volume 221, Number 3, April 25, 1996

|                                                                                                                                                                      |                                                                                            |     |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|-----|
| Elastic Properties of Single Titin Molecules Made Visible through Fluorescent F-Actin Binding                                                                        | <i>Miklós S. Z. Kellermayer and Henk L. Granzier</i>                                       | 491 |
| Plant Calreticulin Is Specifically and Efficiently Phosphorylated by Protein Kinase CK2                                                                              | <i>Barbara Baldan, Lorella Navazio, Alessandra Friso, Paola Mariani, and Flavio Meggio</i> | 498 |
| Isolation and Characterization of <i>Caenorhabditis elegans</i> Extracellular Matrix                                                                                 | <i>Myeongwoo Lee and Hou Tak Cheung</i>                                                    | 503 |
| Activated Lymphocytes Induce Promoter Activity of the TCA3 Gene in Mast Cells Following Cell-to-Cell Contact                                                         | <i>Chad K. Oh and Dean D. Metcalfe</i>                                                     | 510 |
| <i>In Vivo</i> Phosphorylation of Type II Myosin in <i>Saccharomyces cerevisiae</i>                                                                                  | <i>Juan A. Negron, Sabily Gonzalez, and Jose R. Rodriguez-Medina</i>                       | 515 |
| Triiodothyronine Increases Glucose Transporter Isotype 4 mRNA Expression, Glucose Transport, and Glycogen Synthesis in Adult Rat Cardiomyocytes in Long-Term Culture | <i>M. A. Gosteli-Peter, Ch. Schmid, and J. Zapf</i>                                        | 521 |



|                                                                                                                                                                                                                                                                                        |     |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|
| Brain-Specific Interaction of a 91-kDa Membrane-Bound Protein with the Cytoplasmic Tail of the 300-kDa Mannose 6-Phosphate Receptor<br><i>Olaf Rosorius, Olaf-Georg Issinger, and Thomas Braulke</i>                                                                                   | 525 |
| Increase of Mitochondrial PLA2-Released Fatty Acids Is an Early Event in Tumor Necrosis Factor $\alpha$ -Treated WEHI-164 Cells<br><i>Christiane Levrat and Pierre Louisot</i>                                                                                                         | 531 |
| Role of Protein Phosphatase 2A in the Regulation of Mitogen-Activated Protein Kinase Activity in Ventricular Cardiomyocytes<br><i>S. Braconi Quintaje, D. J. Church, M. Rebsamen, M. B. Valloton, B. A. Hemmings, and U. Lang</i>                                                      | 539 |
| Inhibition of Human Immunodeficiency Virus Type 1 Long Terminal Repeat-Driven Transcription by an <i>in Vivo</i> Metabolite of Oltipraz: Implications for Antiretroviral Therapy<br><i>Hans J. Prochaska, Christabel L. Fernandes, Rosa M. Pantoja, and Surendra J. Chavan</i>         | 548 |
| A Mechanism of Regulation of Hepatic Fru 2,6-P <sub>2</sub> Concentration upon Refeeding: Involvement of Xylulose 5-P and Cyclic-AMP<br><i>Ye Qi Liu and Kosaku Uyeda</i>                                                                                                              | 554 |
| Lens-Specific Expression of a Chicken $\beta$ A3/A1-Crystallin Promoter Fragment in Transgenic Mice<br><i>Joan B. McDermott, Ales Cvekl, and Joram Piatigorsky</i>                                                                                                                     | 559 |
| Retinoic Acid-Stimulated Liver Stellate Cells Suppress the Production of Albumin from Parenchymal Cells via TGF- $\beta$<br><i>Hiroshi Koda, Masataka Okuno, Shoko Imai, Hisataka Moriwaki, Yasutoshi Muto, Norifumi Kawada, and Soichi Kojima</i>                                     | 565 |
| The Heme-Responsive Element of the Mouse Heme Oxygenase-1 Gene Is an Extended AP-1 Binding Site That Resembles the Recognition Sequences for MAF and NF-E2 Transcription Factors<br><i>Nilufar M. Inamdar, Young I. Ahn, and Jawed Alam</i>                                            | 570 |
| Bradykinin Increases Intracellular Free Ca <sup>2+</sup> Concentration and Promotes Insulin Secretion in the Clonal $\beta$ -Cell Line, HIT-T15<br><i>Yutaka Saito, Masakatsu Kato, Yuzuru Kubohara, Isao Kobayashi, and Kazuhiko Tatemoto</i>                                         | 577 |
| Cell Proliferation-Dependent Expression of Two Isoforms of the Nucleolar Phosphoprotein P130<br><i>Chi-Yun Pai and Ning-Hsing Yeh</i>                                                                                                                                                  | 581 |
| Cloning and Tissue Distribution of the Human P2Y <sub>1</sub> Receptor<br><i>Rodolphe Janssens, Didier Communi, Sabine Piroton, Michel Samson, Marc Parmentier, and Jean-Marie Boeynaems</i>                                                                                           | 588 |
| Potential of Sodium Butyrate-Induced Apoptosis by Vanadate in Human Promyelocytic Leukemia Cell Line HL-60<br><i>Shih Tzung Chang and Benjamin Yat Ming Yung</i>                                                                                                                       | 594 |
| Suppression of Translation Frameshift by Upstream Termination Codon<br><i>Ayae Honda and Susumu Nishimura</i>                                                                                                                                                                          | 602 |
| Rapid Protein Identification Using N-Terminal "Sequence Tag" and Amino Acid Analysis<br><i>Marc R. Wilkins, Keli Ou, Ron D. Appel, Jean-Charles Sanchez, Jun X. Yan, Olivier Golaz, Vince Farnsworth, Paul Cartier, Denis F. Hochstrasser, Keith L. Williams, and Andrew A. Gooley</i> | 609 |
| Promoter Variation in the Liver Glucokinase Is a Risk Factor for Non-Insulin-Dependent Diabetes Mellitus<br><i>Ken C. Chiu and Jennifer E. McCarthy</i>                                                                                                                                | 614 |
| Intestinal Expression of Apolipoprotein A-IV and C-III Is Coordinately Regulated by Dietary Lipid in Newborn Swine<br><i>Dennis D. Black, Heng Wang, Felicia Hunter, and Reggie Zhan</i>                                                                                               | 619 |
| Monoclonal Antibodies to the EGF Receptor Act as Betacellulin Antagonists<br><i>Helmout Modjtahedi and Christopher Dean</i>                                                                                                                                                            | 625 |

|                                                                                                                                                                                                                                                                                                  |     |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|
| Enhancement of Thermostability and Catalytic Efficiency of AprP, an Alkaline Protease from <i>Pseudomonas</i> sp., by the Introduction of a Disulfide Bond<br><i>Jung Ho Ko, Won Hee Jang, Eun Kyung Kim, Hwanghee Blaise Lee, Kee Don Park, Jae Hoon Chung, and Ook Joon Yoo</i>                | 631 |
| Cysteine-699, a Possible Palmitoylation Site of the Thyrotropin Receptor, Is Not Crucial for cAMP or Phosphoinositide Signaling but Is Necessary for Full Surface Expression<br><i>Shinji Kosugi and Toru Mori</i>                                                                               | 636 |
| Identification of Promoter in the 5'-Flanking Region of the <i>E. coli</i> Thioredoxin-Linked Thiol Peroxidase Gene: Evidence for the Existence of Oxygen-Related Transcriptional Regulatory Protein<br><i>Ha-Kun Kim, Sung-Jin Kim, Ji-Won Lee, Jun-Won Lee, Mee-Kyung Cha, and Il-Han Kim</i>  | 641 |
| Functional Analysis of the Preproendothelin-1 Gene Promoter in Pulmonary Epithelial Cells and Monocytes<br><i>Guo Sun, Giovanni De Angelis, Franca Nucci, Victoria Ackerman, Alberto Bellini, and Sabrina Mattoli</i>                                                                            | 647 |
| Anti-TNF Treatment Reverts Increased Muscle Ubiquitin Gene Expression in Tumour-Bearing Rats<br><i>Marta Llovera, Neus Carbó, Celia García-Martínez, Paola Costelli, Luciana Tessitore, Francesco M. Baccino, Neus Agell, Gregory J. Bagby, Francisco J. López-Soriano, and Josep M. Argilés</i> | 653 |
| The Effects of Ruthenium Red, an Inhibitor of Calcium-Induced Calcium Release, on Phasic Myometrial Contractions<br><i>Mark Phillippe and Andrew Basa</i>                                                                                                                                        | 656 |
| DNA Polymerases from a Parasitic Protozoa <i>Leishmania donovani</i> UR6: Evidence of Presence of a Novel Kind of DNA Polymerase<br><i>Sribir Sen, Necta V. M. Khalkho, and H. K. Majumder</i>                                                                                                   | 662 |
| Nitric Oxide Inhibits Migration of Cultured Endothelial Cells<br><i>Ying-Tung Lau and Wei-Ching Ma</i>                                                                                                                                                                                           | 670 |
| Rab3A Delayed Catecholamine Secretion from Bovine Adrenal Chromaffin Cells<br><i>Chong-Gee Lin, Chien-Yuan Pan, and Lung-Sen Kao</i>                                                                                                                                                             | 675 |
| Fine Mapping of the Human Endothelin-Converting Enzyme Gene by Fluorescent <i>in Situ</i> Hybridization and Radiation Hybrids<br><i>Giovanna Albertin, Gian Paolo Rossi, Franca Majone, Natascia Tiso, Alessandra Mattara, Gian Antonio Danieli, Achille C. Pessina, and Giorgio Palù</i>        | 682 |
| εPKC Acts Like a Marker of Progressive Malignancy in Rat Liver, but Fails to Enhance Tumorigenesis in Rat Hepatoma Cells in Culture<br><i>Gianpaolo Perletti, Luciana Tessitore, Eliana Sesca, Paolo Pani, Mario Umberto Dianzani, and Francesco Piccinini</i>                                   | 688 |
| Relative Contribution of the Selectins in the Neutrophil Recruitment Caused by the Chemokine Cytokine-Induced Neutrophil Chemoattractant (CINC)<br><i>Jeanette G. Harris, Roderick J. Flower, Kazuyoshi Watanabe, Susumu Tsurufuji, Barry A. Woltzky, and Mauro Perretti</i>                     | 692 |
| Coexpression of <i>flt-1</i> , <i>flt-4</i> and <i>KDR</i> in Freshly Isolated and Cultured Human Endothelial Cells<br><i>Peter W. Hewett and J. Clifford Murray</i>                                                                                                                             | 697 |
| Stimulation by C-Type Natriuretic Peptide of the Differentiation of Clonal Osteoblastic MC3T3-E1 Cells<br><i>Atsuto Inoue, Yosiharu Hiruma, Shigehisa Hirose, Akira Yamaguchi, Mayumi Furuya, Shoji Tanaka, and Hiromi Hagiwara</i>                                                              | 703 |
| Apoptosis in Vascular Smooth Muscle Cells: Role of Cell Shrinkage<br><i>Sergei N. Orlov, Than-Vinh Dam, Johanne Tremblay, and Pavel Hamet</i>                                                                                                                                                    | 708 |
| Arachidonic Acid Potentiates ACh Receptor Currents by Protein Kinase C Activation but Not by Receptor Phosphorylation<br><i>Youji Ikeuchi, Tomoyuki Nishizaki, Toshiyuki Matsuoka, and Katumi Sumikawa</i>                                                                                       | 716 |



|                                                                                                                                                                                                                                         |                                                                                                                                                                                                |     |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|
| Specific <i>in Vitro</i> Binding of p53 to the Promoter Region of the Human Mismatch Repair Gene hMSH2                                                                                                                                  | Stefan J. Scherer, Cornelius Welter, Klaus-Dieter Zang, and Steven Dooley                                                                                                                      | 722 |
| <i>In Vivo</i> Detection of Mouse Liver Nitric Oxide Generation by Spin Trapping Electron Paramagnetic Resonance Spectroscopy                                                                                                           | H. Takehara, K. Tsushima, M. Ferrari, and H. Utsumi                                                                                                                                            | 729 |
| Modulation of <i>in Vitro</i> Kidney Cell Growth by Hepatic Transfer RNAs                                                                                                                                                               | Darja Kanduc                                                                                                                                                                                   | 735 |
| Molecular Cloning of the Precursors of Pigment Dispersing Hormone in Crustaceans                                                                                                                                                        | C. Desmoucelles-Carette, D. Sellos, and A. Van Wormhoudt                                                                                                                                       | 739 |
| Molecular Cloning and Characterization of a Novel Stromal Cell-Derived cDNA Encoding a Protein That Facilitates Gene Activation of Recombination Activating Gene (RAG)-1 in Human Lymphoid Progenitors                                  | Hiromi Tagoh, Hiroyuki Kishi, and Atsushi Muraguchi                                                                                                                                            | 744 |
| Myotonic Dystrophy: Antisense Oligonucleotide Inhibition of DMPK Gene Expression <i>in Vitro</i>                                                                                                                                        | U. Galderisi, M. Cipollaro, M. A. B. Melone, G. Iacomino, G. Di Bernardo, G. Galano, R. Contrufo, V. Zappia, and A. Cascino                                                                    | 750 |
| Novel Polypeptides Induced by the Insecticide Lindane ( $\gamma$ -Hexachlorocyclohexane) Are Required for Its Biodegradation by a <i>Sphingomonas paucimobilis</i> Strain                                                               | Tapan K. Adhya, Shree K. Apte, K. Raghu, N. Sethunathan, and N. B. K. Murthy                                                                                                                   | 755 |
| Evidence for a Direct Inhibitory Effect of Extracellular $H^+$ on Store Depletion-Activated $Ca^{2+}$ Entry in Vascular Endothelial Cells                                                                                               | Ichiro Wakabayashi and Klaus Groschner                                                                                                                                                         | 762 |
| Molecular Cloning and Characterization of Human Bone Morphogenic Protein (BMP)-5 Gene Promoter                                                                                                                                          | Morito Sakaue, Sohei Kitazawa, Kotaro Nishida, Riko Kitazawa, and Sakan Maeda                                                                                                                  | 768 |
| The Mechanism for Mechanochemical Energy Transduction in Actin-Myosin Interaction Revealed by <i>in Vitro</i> Motility Assay with ATP Analogues                                                                                         | Sugie Higashi-Fujime and Tetsu Hozumi                                                                                                                                                          | 773 |
| Activation of Phosphatidylinositol 3-Kinase by Prolactin in Nb2 Cells                                                                                                                                                                   | K. A. Al-Sakkaf, P. R. M. Dobson, and B. L. Brown                                                                                                                                              | 779 |
| Interleukin 3 Activates Not Only JAK2 and STAT5, but Also Tyk2, STAT1, and STAT3                                                                                                                                                        | Yuka Nagata and Kazuo Todokoro                                                                                                                                                                 | 785 |
| Vesicular Monoamine Transporter in Microvesicles from Bovine Posterior Pituitaries Is Immunologically Similar to But Distinct from the Chromaffin Granule Counterpart in Its Sensitivities to 1-Methyl-4-Phenylpyridinium and Histamine | Yoshinori Moriyama and Hiroshi Yamada                                                                                                                                                          | 790 |
| Androgen-Dependent Expression of Fibroblast Growth Factor-1 in Submaxillary Gland of Mouse                                                                                                                                              | Tetsuji Okamoto, Yoshinari Myoken, Masahumi Yabumoto, Teruhiko Osaki, Yoshinori Fujita, R. G. Whitney, Mikio Kan, John W. Crabb, Gordon H. Sato, Yukio Kato, Kazuaki Takada, and J. Denry Sato | 795 |
| Organization of the Human Prostacyclin Synthase Gene                                                                                                                                                                                    | Tomohiro Nakayama, Masayoshi Soma, Yoichi Izumi, and Katsuo Kanmatsuse                                                                                                                         | 803 |
| Expression of Functional Melanocortin 1 Receptors in Insect Cells                                                                                                                                                                       | Helgi B. Schiöth, Arja Kuusinen, Ruta Muceniece, Michael Szardenings, Kari Keinänen, and Jarl E. S. Wikberg                                                                                    | 807 |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                |     |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|
| Nonpeptidic HIV Protease Inhibitors: 4-Hydroxy-pyran-2-one Inhibitors with Functional Tethers to P <sub>1</sub> Phenyl Ring to Reach S <sub>3</sub> Pocket of the Enzyme<br><i>J. V. N. Vara Prasad, Peter J. Tummino, Donna Ferguson, James Saunders, Steve Vander Roest, Thomas J. McQuade, Andrea Heldsinger, Eric L. Reyner, Barbra H. Stewart, Robert J. Guttendorf, Kimberly S. Para, Elizabeth A. Lunney, Stephen J. Gracheck, and John M. Domagala</i> | 815 |
| Kinetic Analysis of Inositol Trisphosphate Binding to Pure Inositol Trisphosphate Receptors Using Scintillation Proximity Assay<br><i>Sandip Patel, Alison Harris, Gerry O'Beirne, Neil D. Cook, and Colin W. Taylor</i>                                                                                                                                                                                                                                       | 821 |
| Involvement of an Endogenous Sialidase in Skeletal Muscle Cell Differentiation<br><i>Kaoru Sato and Taeko Miyagi</i>                                                                                                                                                                                                                                                                                                                                           | 826 |
| Fluctuation Analysis of Myosin-Coated Bead Movement along Actin Bundles of <i>Nitella</i><br><i>Hiromichi Yamasaki and Haruto Nakayama</i>                                                                                                                                                                                                                                                                                                                     | 831 |
| Polymorphonuclear Leukocytes Present Laminin Peptides in Endocytic Compartments<br><i>Marcos A. Vannier-Santos, Sandro J. de Souza, Ricardo R. Brentani, and Wanderley de Souza</i>                                                                                                                                                                                                                                                                            | 837 |
| Identification of a Transcriptional Silencer in the Protein-Coding Region of the Mouse Major Inducible <i>Hsp70</i> Gene<br><i>Toshibumi Shimokawa and Hirokazu Fujimoto</i>                                                                                                                                                                                                                                                                                   | 843 |
| ERRATUM                                                                                                                                                                                                                                                                                                                                                                                                                                                        |     |
| Volume 219, Number 3, 1996: Yutaka Kohno, Yoshitatsu Sei, Masahiro Koshiba, Hea O. Kim, and Kenneth A. Jacobson, "Induction of Apoptosis in HL-60 Human Promyelocytic Leukemia Cells by Adenosine A <sub>3</sub> Receptor Agonists," pp. 904-910                                                                                                                                                                                                               | 849 |
| Author Index for Volume 221                                                                                                                                                                                                                                                                                                                                                                                                                                    | 850 |

## NOTICE

The Subject Index for Volume 221 will appear as part of a cumulative index for the year 1996.